

SEQUENCE LISTING

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<120> Amyloid Beta 1-6 Antigen Arrays

<130> 1700.0350002

<150> US 60/396,639

<151> 2002-07-19

<150> US 60/470,432

<151> 2003-05-15

<160> 93

<170> PatentIn version 3.2

<210> 1

<211> 172

<212> PRT

<213> Escherichia coli

<400> 1

Met Ala Val Val Ser Phe Gly Val Asn Ala Ala Pro Thr Thr Pro Gln
1 5 10 15

Gly Gln Gly Arg Val Thr Phe Asn Gly Thr Val Val Asp Ala Pro Cys
20 25 30

Ser Ile Ser Gln Lys Ser Ala Asp Gln Ser Ile Asp Phe Gly Gln Leu
35 40 45

Ser Lys Ser Phe Leu Ala Asn Asp Gly Gln Ser Lys Pro Met Asn Leu
50 55 60

Asp Ile Glu Leu Val Asn Cys Asp Ile Thr Ala Phe Lys Asn Gly Asn
65 70 75 80

Ala Lys Thr Gly Ser Val Lys Leu Ala Phe Thr Gly Pro Thr Val Ser
85 90 95

Gly His Pro Ser Glu Leu Ala Thr Asn Gly Gly Pro Gly Thr Ala Ile
100 105 110

Met Ile Gln Ala Ala Gly Lys Asn Val Pro Phe Asp Gly Thr Glu Gly
115 120 125

Asp Pro Asn Leu Leu Lys Asp Gly Asp Asn Val Leu His Tyr Thr Thr
130 135 140

Val Gly Lys Lys Ser Ser Asp Gly Asn Ala Gln Ile Thr Glu Gly Ala
145 150 155 160

Phe Ser Gly Val Ala Thr Phe Asn Leu Ser Tyr Gln
165 170

<210> 2
<211> 182
<212> PRT
<213> Escherichia coli

<400> 2

Met Lys Ile Lys Thr Leu Ala Ile Val Val Leu Ser Ala Leu Ser Leu
1 5 10 15

Ser Ser Thr Ala Ala Leu Ala Ala Thr Thr Val Asn Gly Gly Thr
20 25 30

Val His Phe Lys Gly Glu Val Val Asn Ala Ala Cys Ala Val Asp Ala
35 40 45

Gly Ser Val Asp Gln Thr Val Gln Leu Gly Gln Val Arg Thr Ala Ser
50 55 60

Leu Ala Gln Glu Gly Ala Thr Ser Ser Ala Val Gly Phe Asn Ile Gln
65 70 75 80

Leu Asn Asp Cys Asp Thr Asn Val Ala Ser Lys Ala Ala Val Ala Phe
85 90 95

Leu Gly Thr Ala Ile Asp Ala Gly His Thr Asn Val Leu Ala Leu Gln
100 105 110

Ser Ser Ala Ala Gly Ser Ala Thr Asn Val Gly Val Gln Ile Leu Asp
115 120 125

Arg Thr Gly Ala Ala Leu Thr Leu Asp Gly Ala Thr Phe Ser Ser Glu
130 135 140

Thr Thr Leu Asn Asn Gly Thr Asn Thr Ile Pro Phe Gln Ala Arg Tyr
145 150 155 160

Phe Ala Thr Gly Ala Ala Thr Pro Gly Ala Ala Asn Ala Asp Ala Thr

165

170

175

Phe Lys Val Gln Tyr Gln
180

<210> 3
<211> 853
<212> DNA
<213> Escherichia coli

<400> 3
acgtttctgt ggctcgacgc atcttcctca ttcttctctc caaaaaccac ctcatgcaat 60
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gtttgtccgc gatgctttac ctctatgagt caaaatggcc ccaatgtttc atcttttggg 180
ggaaactgtg cagtgttggc agtcaaactc gttgacaaac aaagtgtaca gaacgactgc 240
ccatgtcgat ttagaaatag ttttttgaaa ggaaagcagc atgaaaatta aaactctggc 300
aatcgttgtt ctgtcggctc tgtccctcag ttctacgacg gctctggccg ctgccacgac 360
ggttaatggg gggaccgttc actttaaaagg ggaagttgtt aacgccgctt gcgcagttga 420
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tgttgcatct aaagccgctg ttgccttttt aggtacggcg attgatgcgg gtcataccaa 600
cgttctggct ctgcagagtt cagctgcggg tagcgcaaca aacgttggtg tgcagatcct 660
ggacagaacg ggtgctgcgc tgacgctgga tgggtgcgaca tttagttcag aaacaaccct 720
gaataacgga accaatacca ttccgttcca ggcgcgttat tttgcaaccg gggccgcaac 780
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tcagggacgt tca 853

<210> 4
<211> 132
<212> PRT
<213> Bacteriophage Q-beta

<400> 4

Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly Lys
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Ala Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 5
<211> 329
<212> PRT
<213> Bacteriophage Q-beta

<400> 5

Met Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly
1 5 10 15

Lys Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly
20 25 30

Val Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
35 40 45

Val Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
50 55 60

Val Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser
65 70 75 80

Cys Asp Pro Ser Val Thr Arg Gln Ala Tyr Ala Asp Val Thr Phe Ser
85 90 95

Phe Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu
100 105 110

Leu Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln
115 120 125

Leu Asn Pro Ala Tyr Trp Thr Leu Leu Ile Ala Gly Gly Gly Ser Gly
130 135 140

Ser Lys Pro Asp Pro Val Ile Pro Asp Pro Pro Ile Asp Pro Pro Pro
145 150 155 160

Gly Thr Gly Lys Tyr Thr Cys Pro Phe Ala Ile Trp Ser Leu Glu Glu
165 170 175

Val Tyr Glu Pro Pro Thr Lys Asn Arg Pro Trp Pro Ile Tyr Asn Ala
180 185 190

Val Glu Leu Gln Pro Arg Glu Phe Asp Val Ala Leu Lys Asp Leu Leu
195 200 205

Gly Asn Thr Lys Trp Arg Asp Trp Asp Ser Arg Leu Ser Tyr Thr Thr
210 215 220

Phe Arg Gly Cys Arg Gly Asn Gly Tyr Ile Asp Leu Asp Ala Thr Tyr
225 230 235 240

Leu Ala Thr Asp Gln Ala Met Arg Asp Gln Lys Tyr Asp Ile Arg Glu
245 250 255

Gly Lys Lys Pro Gly Ala Phe Gly Asn Ile Glu Arg Phe Ile Tyr Leu
260 265 270

Lys Ser Ile Asn Ala Tyr Cys Ser Leu Ser Asp Ile Ala Ala Tyr His
275 280 285

Ala Asp Gly Val Ile Val Gly Phe Trp Arg Asp Pro Ser Ser Gly Gly
290 295 300

Ala Ile Pro Phe Asp Phe Thr Lys Phe Asp Lys Thr Lys Cys Pro Ile
305 310 315 320

Gln Ala Val Ile Val Val Pro Arg Ala
325

<210> 6
<211> 129
<212> PRT
<213> Bacteriophage R17

<400> 6

Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asn Asp Gly Gly Thr Gly

<210>	7
<211>	130
<212>	PRT
<213>	Bacteriophage fr
<400>	7

Met	Ala	Ser	Asn	Phe	Glu	Glu	Phe	Val	Leu	Val	Asp	Asn	Gly	Gly	Thr
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Gly	Asp	Val	Lys	Val	Ala	Pro	Ser	Asn	Phe	Ala	Asn	Gly	Val	Ala	Glu
			20					25					30		
Trp	Ile	Ser	Ser	Asn	Ser	Arg	Ser	Gln	Ala	Tyr	Lys	Val	Thr	Cys	Ser
		35					40					45			
Val	Arg	Gln	Ser	Ser	Ala	Asn	Asn	Arg	Lys	Tyr	Thr	Val	Lys	Val	Glu
	50					55					60				
Val	Pro	Lys	Val	Ala	Thr	Gln	Val	Gln	Gly	Gly	Val	Glu	Leu	Pro	Val
65				70					75						80

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Ala Ala Trp Arg Ser Tyr Met Asn Met Glu Leu Thr Ile Pro Val Phe
85 90 95

Ala Thr Asn Asp Asp Cys Ala Leu Ile Val Lys Ala Leu Gln Gly Thr
100 105 110

Phe Lys Thr Gly Asn Pro Ile Ala Thr Ala Ile Ala Ala Asn Ser Gly
115 120 125

Ile Tyr
130

<210> 8
<211> 130
<212> PRT
<213> Bacteriophage GA

<400> 8

Met Ala Thr Leu Arg Ser Phe Val Leu Val Asp Asn Gly Gly Thr Gly
1 5 10 15

Asn Val Thr Val Val Pro Val Ser Asn Ala Asn Gly Val Ala Glu Trp
20 25 30

Leu Ser Asn Asn Ser Arg Ser Gln Ala Tyr Arg Val Thr Ala Ser Tyr
35 40 45

Arg Ala Ser Gly Ala Asp Lys Arg Lys Tyr Ala Ile Lys Leu Glu Val
50 55 60

Pro Lys Ile Val Thr Gln Val Val Asn Gly Val Glu Leu Pro Gly Ser
65 70 75 80

Ala Trp Lys Ala Tyr Ala Ser Ile Asp Leu Thr Ile Pro Ile Phe Ala
85 90 95

Ala Thr Asp Asp Val Thr Val Ile Ser Lys Ser Leu Ala Gly Leu Phe
100 105 110

Lys Val Gly Asn Pro Ile Ala Glu Ala Ile Ser Ser Gln Ser Gly Phe
115 120 125

Tyr Ala
130

<210> 9
<211> 132
<212> PRT

<213> Bacteriophage SP

<400> 9

Met Ala Lys Leu Asn Gln Val Thr Leu Ser Lys Ile Gly Lys Asn Gly
1 5 10 15
Asp Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly
20 25 30
Val Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
35 40 45
Val Thr Val Ser Val Ala Gln Pro Ser Arg Asn Arg Lys Asn Phe Lys
50 55 60
Val Gln Ile Lys Leu Gln Asn Pro Thr Ala Cys Thr Arg Asp Ala Cys
65 70 75 80
Asp Pro Ser Val Thr Arg Ser Ala Phe Ala Asp Val Thr Leu Ser Phe
85 90 95
Thr Ser Tyr Ser Thr Asp Glu Glu Arg Ala Leu Ile Arg Thr Glu Leu
100 105 110
Ala Ala Leu Leu Ala Asp Pro Leu Ile Val Asp Ala Ile Asp Asn Leu
115 120 125
Asn Pro Ala Tyr
130

<210> 10

<211> 329

<212> PRT

<213> Bacteriophage SP

<400> 10

Ala Lys Leu Asn Gln Val Thr Leu Ser Lys Ile Gly Lys Asn Gly Asp
1 5 10 15
Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30
Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45
Thr Val Ser Val Ala Gln Pro Ser Arg Asn Arg Lys Asn Phe Lys Val
50 55 60

Gln	Ile	Lys	Leu	Gln	Asn	Pro	Thr	Ala	Cys	Thr	Arg	Asp	Ala	Cys	Asp	65	70	75	80
Pro	Ser	Val	Thr	Arg	Ser	Ala	Phe	Ala	Asp	Val	Thr	Leu	Ser	Phe	Thr	85	90	95	
Ser	Tyr	Ser	Thr	Asp	Glu	Glu	Arg	Ala	Leu	Ile	Arg	Thr	Glu	Leu	Ala	100	105	110	
Ala	Leu	Leu	Ala	Asp	Pro	Leu	Ile	Val	Asp	Ala	Ile	Asp	Asn	Leu	Asn	115	120	125	
Pro	Ala	Tyr	Trp	Ala	Ala	Leu	Leu	Val	Ala	Ser	Ser	Gly	Gly	Gly	Asp	130	135	140	
Asn	Pro	Ser	Asp	Pro	Asp	Val	Pro	Val	Val	Pro	Asp	Val	Lys	Pro	Pro	145	150	155	160
Asp	Gly	Thr	Gly	Arg	Tyr	Lys	Cys	Pro	Phe	Ala	Cys	Tyr	Arg	Leu	Gly	165	170	175	
Ser	Ile	Tyr	Glu	Val	Gly	Lys	Glu	Gly	Ser	Pro	Asp	Ile	Tyr	Glu	Arg	180	185	190	
Gly	Asp	Glu	Val	Ser	Val	Thr	Phe	Asp	Tyr	Ala	Leu	Glu	Asp	Phe	Leu	195	200	205	
Gly	Asn	Thr	Asn	Trp	Arg	Asn	Trp	Asp	Gln	Arg	Leu	Ser	Asp	Tyr	Asp	210	215	220	
Ile	Ala	Asn	Arg	Arg	Arg	Cys	Arg	Gly	Asn	Gly	Tyr	Ile	Asp	Leu	Asp	225	230	235	240
Ala	Thr	Ala	Met	Gln	Ser	Asp	Asp	Phe	Val	Leu	Ser	Gly	Arg	Tyr	Gly	245	250	255	
Val	Arg	Lys	Val	Lys	Phe	Pro	Gly	Ala	Phe	Gly	Ser	Ile	Lys	Tyr	Leu	260	265	270	
Leu	Asn	Ile	Gln	Gly	Asp	Ala	Trp	Leu	Asp	Leu	Ser	Glu	Val	Thr	Ala	275	280	285	
Tyr	Arg	Ser	Tyr	Gly	Met	Val	Ile	Gly	Phe	Trp	Thr	Asp	Ser	Lys	Ser	290	295	300	
Pro	Gln	Leu	Pro	Thr	Asp	Phe	Thr	Gln	Phe	Asn	Ser	Ala	Asn	Cys	Pro				

305 310 315 320

Val Gln Thr Val Ile Ile Ile Pro Ser
325

<210> 11
<211> 130
<212> PRT
<213> Bacteriophage MS2

<400> 11

Met Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asp Asn Gly Gly Thr
1 5 10 15

Gly Asp Val Thr Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu
20 25 30

Trp Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser
35 40 45

Val Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu
50 55 60

Val Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val
65 70 75 80

Ala Ala Trp Arg Ser Tyr Leu Asn Met Glu Leu Thr Ile Pro Ile Phe
85 90 95

Ala Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu
100 105 110

Leu Lys Asp Gly Asn Pro Ile Pro Ser Ala Ile Ala Ala Asn Ser Gly
115 120 125

Ile Tyr
130

<210> 12
<211> 133
<212> PRT
<213> Bacteriophage M11

<400> 12

Met Ala Lys Leu Gln Ala Ile Thr Leu Ser Gly Ile Gly Lys Lys Gly
1 5 10 15

Asp Val Thr Leu Asp Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly

[illegible]

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<210> 13
<211> 133
<212> PRT
<213> Bacteriophage MX1
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<400> 13

Met Ala Lys Leu Gln Ala Ile Thr Leu Ser Gly Ile Gly Lys Asn Gly
1 5 10 15

Asp Val Thr Leu Asn Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly
20 25 30

Val Ala Ala Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
35 40 45

Val Thr Ile Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
50 55 60

Val Gln Val Lys Ile Gln Asn Pro Thr Ser Cys Thr Ala Ser Gly Thr
65 70 75 80

Cys Asp Pro Ser Val Thr Arg Ser Ala Tyr Ala Asp Val Thr Phe Ser
85 90 95

Phe Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Leu Val Arg Thr Glu
100 105 110

Leu Lys Ala Leu Leu Ala Asp Pro Met Leu Ile Asp Ala Ile Asp Asn
115 120 125

Leu Asn Pro Ala Tyr
130

<210> 14
<211> 330
<212> PRT
<213> Bacteriophage NL95

<400> 14

Met Ala Lys Leu Asn Lys Val Thr Leu Thr Gly Ile Gly Lys Ala Gly
1 5 10 15

Asn Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly
20 25 30

Val Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
35 40 45

Val Thr Val Ser Val Ala Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
50 55 60

Val Gln Ile Lys Leu Gln Asn Pro Thr Ala Cys Thr Lys Asp Ala Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Ser Gly Ser Arg Asp Val Thr Leu Ser Phe
85 90 95

Thr Ser Tyr Ser Thr Glu Arg Glu Arg Ala Leu Ile Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Lys Asp Asp Leu Ile Val Asp Ala Ile Asp Asn Leu
115 120 125

Asn Pro Ala Tyr Trp Ala Ala Leu Leu Ala Ala Ser Pro Gly Gly Gly
130 135 140

Asn Asn Pro Tyr Pro Gly Val Pro Asp Ser Pro Asn Val Lys Pro Pro
145 150 155 160

Gly Gly Thr Gly Thr Tyr Arg Cys Pro Phe Ala Cys Tyr Arg Arg Gly
165 170 175

Glu Leu Ile Thr Glu Ala Lys Asp Gly Ala Cys Ala Leu Tyr Ala Cys
180 185 190

Gly Ser Glu Ala Leu Val Glu Phe Glu Tyr Ala Leu Glu Asp Phe Leu
195 200 205

Gly Asn Glu Phe Trp Arg Asn Trp Asp Gly Arg Leu Ser Lys Tyr Asp
210 215 220

Ile Glu Thr His Arg Arg Cys Arg Gly Asn Gly Tyr Val Asp Leu Asp
225 230 235 240

Ala Ser Val Met Gln Ser Asp Glu Tyr Val Leu Ser Gly Ala Tyr Asp
245 250 255

Val Val Lys Met Gln Pro Pro Gly Thr Phe Asp Ser Pro Arg Tyr Tyr
260 265 270

Leu His Leu Met Asp Gly Ile Tyr Val Asp Leu Ala Glu Val Thr Ala
275 280 285

Tyr Arg Ser Tyr Gly Met Val Ile Gly Phe Trp Thr Asp Ser Lys Ser
290 295 300

Pro Gln Leu Pro Thr Asp Phe Thr Arg Phe Asn Arg His Asn Cys Pro
305 310 315 320

Val Gln Thr Val Ile Val Ile Pro Ser Leu
325 330

<210> 15
<211> 129
<212> PRT
<213> Bacteriophage f2

<400> 15

Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asn Asp Gly Gly Thr Gly
1 5 10 15

Asn Val Thr Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu Trp
20 25 30

Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser Val
35 40 45

Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu Val
50 55 60

Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val Ala
65 70 75 80

Ala Trp Arg Ser Tyr Leu Asn Leu Glu Leu Thr Ile Pro Ile Phe Ala
85 90 95

Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu Leu
100 105 110

Lys Asp Gly Asn Pro Ile Pro Ser Ala Ile Ala Ala Asn Ser Gly Ile
115 120 125

Tyr

<210> 16
<211> 128
<212> PRT
<213> Bacteriophage PP7

<400> 16

Met Ser Lys Thr Ile Val Leu Ser Val Gly Glu Ala Thr Arg Thr Leu
1 5 10 15

Thr Glu Ile Gln Ser Thr Ala Asp Arg Gln Ile Phe Glu Glu Lys Val
20 25 30

Gly Pro Leu Val Gly Arg Leu Arg Leu Thr Ala Ser Leu Arg Gln Asn
35 40 45

Gly Ala Lys Thr Ala Tyr Arg Val Asn Leu Lys Leu Asp Gln Ala Asp
50 55 60

Val Val Asp Cys Ser Thr Ser Val Cys Gly Glu Leu Pro Lys Val Arg
65 70 75 80

Tyr Thr Gln Val Trp Ser His Asp Val Thr Ile Val Ala Asn Ser Thr
85 90 95

Glu Ala Ser Arg Lys Ser Leu Tyr Asp Leu Thr Lys Ser Leu Val Ala
100 105 110

Thr Ser Gln Val Glu Asp Leu Val Val Asn Leu Val Pro Leu Gly Arg
115 120 125

<210> 17

<211> 132
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Bacteriophage Qbeta 240 mutant

<400> 17

Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Arg Asp Gly Lys
 1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
 20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
 35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
 50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
 65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
 85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
 100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
 115 120 125

Asn Pro Ala Tyr
 130

<210> 18
 <211> 132
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Bacteriophage Q-beta 243 mutant

<400> 18

Ala Lys Leu Glu Thr Val Thr Leu Gly Lys Ile Gly Lys Asp Gly Lys
 1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
 20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 19
<211> 132
<212> PRT
<213> Artificial Sequence

<220>
<223> Bacteriophage Q-beta 250 mutant

<400> 19

Ala Arg Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Arg Asp Gly Lys
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 20
<211> 132
<212> PRT
<213> Artificial Sequence

<220>
<223> Bacteriophage Q-beta 251 mutant

<400> 20

Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly Arg
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 21
<211> 132
<212> PRT

<213> Artificial Sequence

<220>

<223> Bacteriophage Q-beta 259 mutant

<400> 21

Ala Arg Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly Arg
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 22

<211> 185

<212> PRT

<213> Hepatitis B virus

<400> 22

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
145 150 155 160

Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
165 170 175

Arg Ser Gln Ser Arg Glu Ser Gln Cys
180 185

<210> 23
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 23

Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Asn
85 90 95

Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Val Ser Arg Asp
100 105 110

Leu Val Val Gly Tyr Val Asn Thr Thr Val Gly Leu Lys Phe Arg Gln
115 120 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205

Glu Ser Gln Cys
210

<210> 24
<211> 188
<212> PRT
<213> Hepatitis B virus

<400> 24

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu
1 5 10 15

Asn Phe Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp
20 25 30

Thr Ala Thr Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys
35 40 45

Ser Pro His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Asp Glu
50 55 60

Leu Thr Lys Leu Ile Ala Trp Met Ser Ser Asn Ile Thr Ser Glu Gln
65 70 75 80

Val Arg Thr Ile Ile Val Asn His Val Asn Asp Thr Trp Gly Leu Lys
85 90 95

Val Arg Gln Ser Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln
100 105 110

His Thr Val Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Ala Pro Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu His Thr Val Ile Arg Arg Arg Gly Gly Ala Arg Ala Ser Arg Ser
145 150 155 160

Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro
165 170 175

Arg Arg Arg Arg Ser Gln Ser Pro Ser Thr Asn Cys
180 185

<210> 25
<211> 185
<212> PRT
<213> Hepatitis B virus

<400> 25

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg

100	105	110
Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr		
115	120	125
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro		
130	135	140
Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg		
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Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg		
165	170	175
Arg Ser Gln Ser Arg Glu Ser Gln Cys		
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Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu		
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Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp		
20	25	30
Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys		
35	40	45
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp		
50	55	60
Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Gly Gly		
65	70	75
Lys Gly Gly Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val		
85	90	95
Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr		
100	105	110
Phe Gly Arg Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp		
115	120	125

Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser
130 135 140

Thr Leu Pro Glu Thr Thr Val Val
145 150

<210> 27
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<212> DNA
<213> Artificial Sequence

<220>
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<210> 28
<211> 131
<212> PRT
<213> Bacteriophage AP205

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<400> 28

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Met Ala Asn Lys Pro Met Gln Pro Ile Thr Ser Thr Ala Asn Lys Ile
1          5          10          15

```

```

Val Trp Ser Asp Pro Thr Arg Leu Ser Thr Thr Phe Ser Ala Ser Leu
          20          25          30

```

```

Leu Arg Gln Arg Val Lys Val Gly Ile Ala Glu Leu Asn Asn Val Ser
          35          40          45

```

```

Gly Gln Tyr Val Ser Val Tyr Lys Arg Pro Ala Pro Lys Pro Glu Gly
          50          55          60

```

```

Cys Ala Asp Ala Cys Val Ile Met Pro Asn Glu Asn Gln Ser Ile Arg
65          70          75          80

```

```

Thr Val Ile Ser Gly Ser Ala Glu Asn Leu Ala Thr Leu Lys Ala Glu
          85          90          95

```

```

Trp Glu Thr His Lys Arg Asn Val Asp Thr Leu Phe Ala Ser Gly Asn
          100          105          110

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Ala Gly Leu Gly Phe Leu Asp Pro Thr Ala Ala Ile Val Ser Ser Asp
          115          120          125

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Thr Thr Ala
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<210> 29
<211> 131
<212> PRT

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<213> Artificial Sequence

<220>

<223> AP205 coat protein

<400> 29

Met Ala Asn Lys Thr Met Gln Pro Ile Thr Ser Thr Ala Asn Lys Ile
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Val Trp Ser Asp Pro Thr Arg Leu Ser Thr Thr Phe Ser Ala Ser Leu
20 25 30

Leu Arg Gln Arg Val Lys Val Gly Ile Ala Glu Leu Asn Asn Val Ser
35 40 45

Gly Gln Tyr Val Ser Val Tyr Lys Arg Pro Ala Pro Lys Pro Glu Gly
50 55 60

Cys Ala Asp Ala Cys Val Ile Met Pro Asn Glu Asn Gln Ser Ile Arg
65 70 75 80

Thr Val Ile Ser Gly Ser Ala Glu Asn Leu Ala Thr Leu Lys Ala Glu
85 90 95

Trp Glu Thr His Lys Arg Asn Val Asp Thr Leu Phe Ala Ser Gly Asn
100 105 110

Ala Gly Leu Gly Phe Leu Asp Pro Thr Ala Ala Ile Val Ser Ser Asp
115 120 125

Thr Thr Ala
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<210> 30

<211> 3607

<212> DNA

<213> Artificial Sequence

<220>

<223> plasmid pAP281-32

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acaatgcaac cgatcacatc tacagcaaataaaaattgtgt ggtcggatcc aactcgttta 180

tcaactacat tttcagcaag tctgttacgc caacgtgtta aagttggtat agccgaactg 240

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<210> 31
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<212> PRT
<213> Artificial Sequence

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<220>
<223> N-terminal linker

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<400> 31

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Cys Gly Asp Glu Gly Gly

1 5

<210> 32
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> C-terminal linker

<400> 32

Gly Gly Glu Asp Gly Cys
1 5

<210> 33
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker

<400> 33

Gly Gly Lys Gly Gly
1 5

<210> 34
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> N-terminal glycine linker

<220>
<221> REPEAT
<222> (1)..(1)
<223> Glycine can be repeated from zero to five times

<220>
<221> REPEAT
<222> (3)..(3)
<223> Glycine can be repeated from zero to twelve times

<400> 34

Gly Cys Gly
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<210> 35
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> N terminal glycine serine linkers

<220>

<221> REPEAT

<222> (1)..(1)

<223> Glycine can be repeated from zero to five times

<220>

<221> REPEAT

<222> (3)..(3)

<223> Glycine can be repeated from zero to ten times

<220>

<221> REPEAT

<222> (4)..(4)

<223> Serine can be repeated from zero to two times

<220>

<221> REPEAT

<222> (5)..(9)

<223> These residues can be repeated from zero to three times as a group

<400> 35

Gly Cys Gly Ser Gly Gly Gly Gly Ser
1 5

<210> 36

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> C-terminal glycine linker

<220>

<221> REPEAT

<222> (1)..(1)

<223> Glycine can be repeated from zero to twelve times

<220>

<221> REPEAT

<222> (3)..(3)

<223> Glycine can be repeated from zero to five times

<400> 36

Gly Cys Gly
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<210> 37

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C terminal glycine serine linkers

<220>
<221> REPEAT
<222> (1)..(1)
<223> Glycine can be repeated from zero to ten times

<220>
<221> REPEAT
<222> (2)..(2)
<223> Serine can be repeated from zero to two times

<220>
<221> REPEAT
<222> (3)..(7)
<223> These residues can be repeated from zero to three times as a group

<220>
<221> REPEAT
<222> (8)..(8)
<223> Glycine can be repeated from zero to eight times

<220>
<221> REPEAT
<222> (10)..(10)
<223> Glycine can be repeated from zero to five times

<400> 37

Gly Ser Gly Gly Gly Gly Ser Gly Cys Gly
1 5 10

<210> 38
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Glycine serine linker

<220>
<221> REPEAT
<222> (1)..(5)
<223> These residues can be repeated any times as a group

<400> 38

Gly Gly Gly Gly Ser
1 5

<210> 39
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> N-terminal gamma1

<400> 39

Cys	Gly	Asp	Lys	Thr	His	Thr	Ser	Pro	Pro
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<210> 40

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> C-terminal gamma 1

<400> 40

Asp	Lys	Thr	His	Thr	Ser	Pro	Pro	Cys	Gly
1				5					10

<210> 41

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> N-terminal gamma 3

<400> 41

Cys	Gly	Gly	Pro	Lys	Pro	Ser	Thr	Pro	Pro	Gly	Ser	Ser	Gly	Gly	Ala
1				5					10					15	

Pro

<210> 42

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> C-terminal gamma 3

<400> 42

Pro	Lys	Pro	Ser	Thr	Pro	Pro	Gly	Ser	Ser	Gly	Gly	Ala	Pro	Gly	Gly
1				5					10					15	

Cys Gly

<210> 43

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> N-terminal glycine linker

<400> 43

Gly Cys Gly Gly Gly Gly
1 5

<210> 44

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> C-terminal glycine linker

<400> 44

Gly Gly Gly Gly Cys Gly
1 5

<210> 45

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> C-terminal glycine-lysine linker

<400> 45

Gly Gly Lys Lys Gly Cys
1 5

<210> 46

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> N-terminal glycine-lysine linker

<400> 46

Cys Gly Lys Lys Gly Gly
1 5

<210> 47

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> C-terminal linker

<400> 47

Gly Gly Cys Gly
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<210> 48
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 48
ggtaacatcg gtcgagatgg aaaacaaact ctgggtcc 37

<210> 49
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<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 49
ggaccagagt ttgttttcca tctcgaccga tggtacc 37

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<211> 22
<212> DNA
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<220>
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agctcgccccg gggatcctct ag 22

<210> 51
<211> 40
<212> DNA
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<220>
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<400> 51
cgatgcattt catccttagt tatcaatacg ctgggttcag 40

<210> 52
<211> 36
<212> DNA
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<400> 52
ggcaaaatta gagactgtta ctttaggtaa gatcgg 36

<210> 53
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<212> DNA
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<400> 53
ccgatcttac ctaaagtaac agtctctaataa tttgcc 36

<210> 54
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<400> 54
ggccatggca cgactcgaga ctgttacttt agg 33

<210> 55
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<400> 55
gatttaggtg acactatag 19

<210> 56
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<400> 56
gatggacgtc aaactctggt cctcaatccg cgtgggg 37

<210> 57
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<400> 57
ccccacgcgg attgaggacc agagtttgac gtccatc 37

<210> 58
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<223> EcoRIHBcAg(s) primer

<400> 58
ccggaattca tggacattga cccttataaa g 31

<210> 59
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<220>
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<400> 59
cctagagcca cctttgccac catcttctaa attagtagcc acccaggtag c 51

<210> 60
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<212> DNA
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<220>
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<400> 60
gaagatggtg gcaaagggtg ctctagggac ctagtagtca gttatgtc 48

<210> 61
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<220>
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<400> 61
cgcggtcccaa gcttctaaac aacagtagtc tccggaag 38

<210> 62
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gtgcagtatg gtgaggtgag gaatgctcag gagactc 37

<210> 63
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gagtctcctg agcattcctc acctcaccat actgcac 37

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<223> 107as primer

<400> 64
cttccaaaag tgagggaaga aatgtgaaac cac 33

<210> 65
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<220>
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<400> 65
cgcggtcccaa gcttctaaac aacagtagtc tccggaagcg ttgatag 47

<210> 66
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<400> 66
gtgggtttcac atttcttccc tcacttttgg aag 33

<210> 67
<211> 38
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<223> HBcAgwtHindIIII primer

<400> 67
cgcggtcccaa gcttctaaca ttgagattcc cgagattg 38

<210> 68
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<223> epitope CeH3

<400> 68

Val Asn Leu Thr Trp Ser Arg Ala Ser Gly
1 5 10

<210> 69

<211> 51

<212> DNA

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<223> CeH3fwd primer

<220>

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<222> (1)..(51)

<400> 69

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Val Asn Leu Thr Trp Ser Arg Ala Ser Gly Ala Ser Arg Asp Leu Val
1 5 10 15

gtc 51
Val

<210> 70

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> CeH3fwd primer

<400> 70

Val Asn Leu Thr Trp Ser Arg Ala Ser Gly Ala Ser Arg Asp Leu Val
1 5 10 15

Val

<210> 71

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> CeH3rev primer

<400> 71

accagaagca cgagaccagg tcaagttaac atcttccaaa ttattaccca c 51

<210> 72

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> CeH3rev primer peptide

<400> 72

Asp Glu Leu Asn Asn Gly Val
1 5

<210> 73
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> HBcAg-wt EcoRI fwd primer

<400> 73
ccggaattca tggacattga cccttataaa g

31

<210> 74
<211> 38
<212> DNA
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<220>
<223> HBcAg-wt Hind III rev primer

<400> 74
cgcggtcccaa gcttctaaca ttgagattcc cgagattg

38

<210> 75
<211> 6
<212> PRT
<213> Homo sapiens

<400> 75

Asp Ala Glu Phe Arg His
1 5

<210> 76
<211> 6
<212> PRT
<213> Mus musculus

<400> 76

Asp Ala Glu Phe Gly His
1 5

<210> 77
<211> 9
<212> PRT

<213> Artificial Sequence

<220>

<223> Abeta 1-6 GGC

<400> 77

Asp Ala Glu Phe Arg His Gly Gly Cys
1 5

<210> 78

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> murine Abeta 1-6 GGC

<400> 78

Asp Ala Glu Phe Gly His Gly Gly Cys
1 5

<210> 79

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> primer p1.44

<400> 79

aaccatggca aataagccaa tgcaaccg

28

<210> 80

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer p1.45

<400> 80

aatctagaat tttctgcgca cccatcccgg

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<210> 81

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer p1.46

<400> 81

aaaagcttaa gcagtagtat cagacgatac

30

<210> 82

<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> primer p1.47

<400> 82
gagtgatcca actcgtttat caactacatt ttcagcaagt ctg 43

<210> 83
<211> 43
<212> DNA
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<220>
<223> primer p1.48

<400> 83
cagacttgct gaaaatgtag ttgataaacg agttggatca ctc 43

<210> 84
<211> 6
<212> PRT
<213> homo sapiens

<400> 84

Asp Ala Glu Phe Arg His
1 5

<210> 85
<211> 6
<212> PRT
<213> Oryctolagus cuniculus

<400> 85

Asp Ala Glu Phe Arg His
1 5

<210> 86
<211> 6
<212> PRT
<213> Xenopus laevis

<400> 86

Asp Ser Glu Tyr Arg His
1 5

<210> 87
<211> 6
<212> PRT
<213> Rattus norvegicus

<400> 87

Asp Ala Glu Phe Gly His
1 5

<210> 88
<211> 6
<212> PRT
<213> Cavia porcellus

<400> 88

Asp Ala Glu Phe Arg His
1 5

<210> 89
<211> 15
<212> PRT
<213> Mus musculus

<400> 89

Val His Glu Pro His Glu Phe Arg His Val Ala Leu Asn Pro Val
1 5 10 15

<210> 90
<211> 6
<212> PRT
<213> Mus musculus

<400> 90

Tyr Tyr Glu Phe Arg His
1 5

<210> 91
<211> 42
<212> PRT
<213> Homo sapiens

<400> 91

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
35 40

<210> 92
<211> 770
<212> PRT
<213> Homo sapiens

<400> 92

Met Leu Pro Gly Leu Ala Leu Leu Leu Leu Ala Ala Trp Thr Ala Arg
1 5 10 15

Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro
20 25 30

Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln
35 40 45

Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp
50 55 60

Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu
65 70 75 80

Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn
85 90 95

Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val
100 105 110

Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu
115 120 125

Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys
130 135 140

Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu
145 150 155 160

Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile
165 170 175

Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu
180 185 190

Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val
195 200 205

Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys
210 215 220

Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu
225 230 235 240

Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu
245 250 255

Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile
260 265 270

Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg
275 280 285

Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala Met Ile
290 295 300

Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Phe
305 310 315 320

Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu Tyr
325 330 335

Cys Met Ala Val Cys Gly Ser Ala Met Ser Gln Ser Leu Leu Lys Thr
340 345 350

Thr Gln Glu Pro Leu Ala Arg Asp Pro Val Lys Leu Pro Thr Thr Ala
355 360 365

Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu Glu Thr Pro Gly Asp
370 375 380

Glu Asn Glu His Ala His Phe Gln Lys Ala Lys Glu Arg Leu Glu Ala
385 390 395 400

Lys His Arg Glu Arg Met Ser Gln Val Met Arg Glu Trp Glu Glu Ala
405 410 415

Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp Lys Lys Ala Val Ile
420 425 430

Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu Gln Glu Ala Ala Asn
435 440 445

Glu Arg Gln Gln Leu Val Glu Thr His Met Ala Arg Val Glu Ala Met
450 455 460

Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn Tyr Ile Thr Ala Leu
465 470 475 480

Gln Ala Val Pro Pro Arg Pro Arg His Val Phe Asn Met Leu Lys Lys
485 490 495

Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His Thr Leu Lys His Phe
500 505 510

Glu His Val Arg Met Val Asp Pro Lys Lys Ala Ala Gln Ile Arg Ser
515 520 525

Gln Val Met Thr His Leu Arg Val Ile Tyr Glu Arg Met Asn Gln Ser
530 535 540

Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala Glu Glu Ile Gln Asp
545 550 555 560

Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn Tyr Ser Asp Asp Val
565 570 575

Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser Tyr Gly Asn Asp Ala
580 585 590

Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr Val Glu Leu Leu Pro
595 600 605

Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln Pro Trp His Ser Phe
610 615 620

Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn Glu Val Glu Pro Val
625 630 635 640

Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr Thr Arg Pro Gly Ser
645 650 655

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys Met Asp
660 665 670

Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu
675 680 685

Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly
690 695 700

Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Val Ile Thr Leu
705 710 715 720

Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile His His Gly Val Val
725 730 735

Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg His Leu Ser Lys Met
740 745 750

Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys Phe Phe Glu Gln Met
755 760 765

Gln Asn
770

<210> 93
<211> 82
<212> PRT
<213> Homo sapiens

<400> 93

Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys
1 5 10 15

Met Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln
20 25 30

Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile
35 40 45

Ile Gly Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Ile Ile
50 55 60

Thr Leu Val Met Leu Lys Lys Gln Tyr Thr Ser Asn His His Gly Val
65 70 75 80

Val Glu